

IN THE CLAIMS:

The following claims will replace all prior versions of claims in this application.

1-11. (Cancelled)

12. (Currently amended) The method according to claim 4 20, wherein different concentrations of a substance having a given physicochemical affinity for the substances or particles or a combination thereof being separated are adjusted in the phases.

13-19. (Cancelled)

20. (New) A method for separation of chemical substances and/or particles utilizing a microfluid chamber having intake channels and consisting of a plurality of parallel arranged adjoining liquid lamellae of two or more different phases having a thickness in the submillimeter range or smaller, comprising the steps of:

introducing liquid lamaellae into said intake channels of said microfluid chamber, said microfluid chamber having a first electrode pair arranged thereon such that an electric field is generated parallel to the phase boundaries of the said liquid lamellae and a second electrode pair such that an electric field is generated perpendicular to the phase boundaries of said liquid lamellae; and

flowing said liquid lamellae through said microfluid chamber while the electric field is applied by said first and second electrode pairs.